

4.5:1 pilot ratio, standard capacity counterbalance valve

Capacity:
15 gpm (60 L/min.)

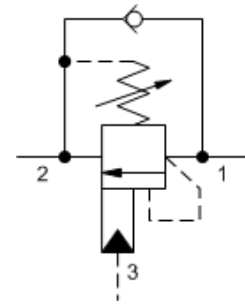
Functional Group:
Products : Cartridges : Counterbalance : 3-Port Non-vented : Standard, 4.5:1 Pilot Ratio

Model:
CBCG-LKN

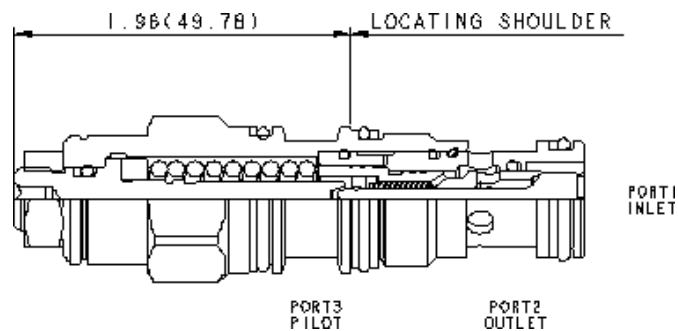
Product Description

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over center valve.



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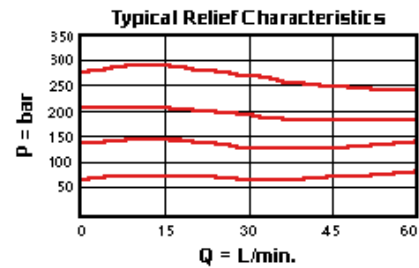
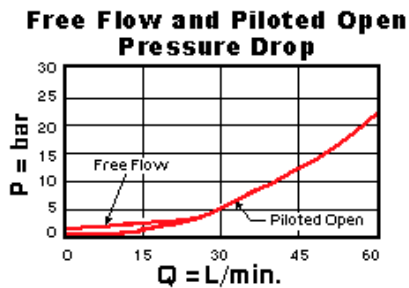
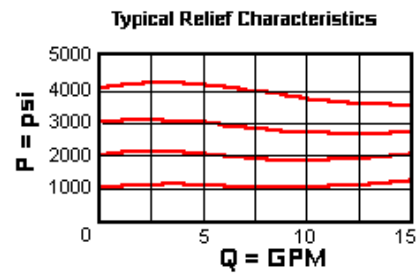
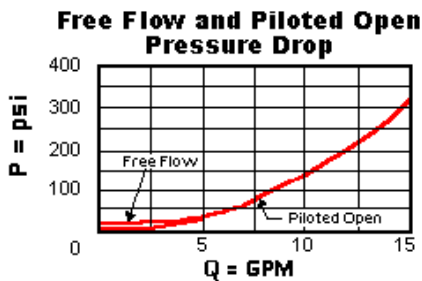
Technical Features

- Counterbalance valves should be set at least 1.3 times the maximum load induced pressure.
- Turn adjustment clockwise to decrease setting and release load.
- Full clockwise setting is less than 200 psi (14 bar).
- Backpressure at port 2 adds to the effective relief setting at a ratio of 1 plus the pilot ratio times the backpressure.
- Reseat exceeds 85% of set pressure when the valve is standard set. Settings lower than the standard set pressure may result in lower reseal percentages.
- Sun counterbalance cartridges can be installed directly into a cavity machined in an actuator housing for added protection and improved stiffness in the circuit.
- Two check valve cracking pressures are available. Use the 25 psi (1,7 bar) check unless actuator cavitation is a concern.
- This valve does not have positive seals on the pilot section and will pass up to 2 in³/min. @1000 psi (32 cc/min. @70 bar) between port 2 and port 3. This is a consideration in master-slave circuits and in the leak testing of valve-cylinder assemblies.
- All 3-port counterbalance, load control, and pilot-to-open check cartridges are physically interchangeable (i.e. same flow path, same cavity for a given frame size).
- Stainless steel cartridge options P or W are intended for use within corrosive environments with all external components manufactured in stainless steel or titanium. Internal working components remain the same as the standard valves.
- Incorporates the Sun floating style construction to minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

Technical Data

	U.S. Units	Metric Units
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Cavity	T-11A	
Capacity	15 gpm	60 L/min.
Pilot Ratio	4.5:1	
Maximum Recommended Load Pressure at Maximum Setting	3850 psi	270 bar
Maximum Setting	5000 psi	350 bar
Adjustment - Number of Counterclockwise Turns to Increase Setting	3.75	
Factory Pressure Settings Established at	2 in ³ /min.	30 cc/min.
Maximum Valve Leakage at Reseat	5 drops/min.	0,3 cc/min.
Series (from Cavity)	Series 1	
Reseat	>85% of Set Pressure	
Valve Hex Size	7/8 in.	22,2 mm
Valve Installation Torque	30 - 35 lbf ft	45 - 50 Nm
Adjustment Screw Internal Hex Size	5/32 in.	4 mm
Adjustment Locknut Hex Size	9/16 in.	15 mm
Adjustment Nut Torque	108 lbf in.	12 Nm
Seal Kits - Cartridge	Buna: 990-011-007	
Seal Kits - Cartridge	Viton: 990-011-006	
Model Weight	0.34 lb.	0.15 kg.



CBCG-LKN

Control

Functional Setting Range

External Material/Seal Material

L Standard Screw Adjustment

K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/1,7 bar Check), 2000 psi (140 bar) Standard Setting

+0.00

N Buna-N

+0.00

R* Lockwired Screw Adjustment +5.10

When the control is X, the range must be M
When the range is M, the control must be X

If the material/seal is P, the control must be L or C
If the material/seal is W, the control must be L or C

Customer specified setting stamped on hex \$1.10

Related Models

[CBCGX](#)

Related Documents (opens in new window):

- [Explanation of Sun cartridge control options - US units.](#)
- [Explanation of Sun cartridge control options - metric units.](#)

Special Notes

- A fixed setting version is available for this model. To view this product page, use Sun's search box and type in the 4 letter model code. The search result will include the fixed setting version.

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